

- A, air pump
- C, growing culture
- D, air exit port
- F, filter
- G, gang valve
- H, water humidification flask
- I, input chamber
- K, heating tape
- M, fresh medium
- O, siphon
- P, peristaltic pump
- W, waste

FIGURE 1A



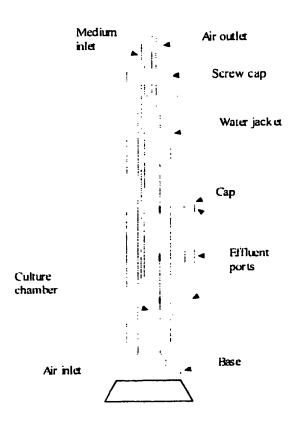


FIGURE 1B

Figure 2
Directed Evolution of the Quinolone-Resistance Determinant Region (QRDR) of the *gyrA* Gene Sequence of *E. coli**

	G** D** S** D**
E.coli 11775(WT)	E. coli 11775(WT) TIGGIGACGIAAATACCATCCCCATGGIGACTCGGCGGTTIATGACACGATCGTCGTATGGCGCAGCCATTCTCGCTGCGTTACATGCTGGTAGACGGTC
NX-E09	TIGGIGACCIAATCGGTAAATACCATCCCCATGGTGACTCGCCGGTTTATATCACGATCGTCCGTATGGCGCACATTCTCGCTGCTTACATGCTGGTAGACGGTC
NX-E10	TIGGIGACGIAALCGGIAAAIACCAICCCCAIGGIGACTIGGCGGITIATGACACGAICGICCGIAIGGCGCAGCCAITCTCGCTGCGTCACATGCIGGIAGACGGTC
NX-N6	TTGGIGACGIAATCGGTAAATACCATCCCCATGGTGACTTGGCGGTTTATGACACGATCGTCCGTATGGCGCAGCCATTCTCGCTGCGTACATGGTGGTAGACGGTC
NX-M3	TTGGTGACGTAATCGGTAAATACCATCCCCATGGTGA2TCGGCGGTTTAT3GCACGATCGTCGTATGGCGCGCAGCCATTCTCGCTGCGTACATGCTGGTAGACGGTC
NX-M5	TTGGTGACGTAATCGGTAAATACCATCCCCATSGTGALTCGGCGGTTTATAACACGATCGTCCGTATGGCGCCAGCCA
NX-M6	TIGGIGACGTAATCGGTAAATACCATCCCCAIGGJGAC1CGGCGGTTTAI3GCACGATCGICCGTATGGCGCCAGCCATTCTCGCTGCGTTACATGCTGGTAGACGGTC
D7NX-E1	TIGGIGACGIAATCGGIAAATACAATACAATGGGGACTTGGCGGTTTATSACACGATCGICCGIAIGGCGAGCCAIICTCGCTGCGTIACAIGCTGCGAACACGSIC
D7NX-E2	TTGGTGACGTAATCGGTAAATACCATCCCCATGGTGATTTGGCGGTTTATSACACGATCGTCCSTATGGCGCAGCCATTCTCGCTGCTTACATGCTGGTAGACGGTC
D3NX-E5	TIGGIGACGIAAICGGIAAAIACCAICCCCAIGGIGACIIFGCGGTITAISACACGAICGICCSIAIGGCGCAGCCAITCICGCIGCGITACAIGCIGGIAGACGGIC
D3NX-E6	TTGGTGACGTAATCGGTAAATACCATCCCCATGGTGACTTGGCGGTTTATSACACGATCGTCGSTATGGGCGCAGCCATTCTCGCTGCGTTACATGCTGGTAGACGGTC
D2C2-8	TTGGTGACGTAATCGGTAAATACCATCCCCXJTGTGACTCGGCGGTTTATSACACGATCCTCCSTATGGCGCAGCCATTCTCGCTGCGTTACATGCTGGTAGACGGTC
D2C2-h	TTGGTGACGTAATCGGTAAATACCATCCCCATTGTGACTCGGCGGTTTATSACACGATCCTCCSTATSGCGCAGCCATTCTCGCTGCGTTACATGCTGGTAGACSGTC
0202.1	TIGGIGAKGGAAAATAGGAAAATAGGAAAGGTAAATTGAGGAGTTAATSACAGATGGATGCGTAAATAGGGGAAGGAATAGTGGATAAAATAGATAAAAGAGT

G = Glycine, D = Aspartic Acid, S = serine (amino acid positions ae numbered as superscripts).
 Single or double base pair point mutations are shown in blue letters and the mis-matching bases are shown in red letters.